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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,520

02/04/2004

Chia-Shun Hsiao

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EXAMINER

CHACKO DAVIS, DABORAH

ART UNIT

PAPER NUMBER

1756

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/772,520

Applicant(s)

HSIAO ET AL.

Examiner

Daborah Chacko-Davis

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-52, are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent No. 6,787,415 (Chung et al., hereinafter after Chung).

Chung, in the abstract, in col 2, lines 28-67, in col 6, lines 31-67, discloses the manufacturing of a integrated circuit, wherein the integrated circuit has nonvolatile memory cells, forming a plurality of first structures (more than one) on a semiconductor substrate that projects upward, the first structure includes floating gates for a plurality of nonvolatile memory cells associated with the first structure, the first structure includes a first dielectric sidewall; forming on the semiconductor substrate pedestals (more than one) that projects upwards, the pedestal is positioned between two first structures and adjacent the first sidewalls (see reference 340 of figure 3B); forming a layer (first layer) and etching (first etch) the layer (processing the first layer) to provide a plurality of conductive lines (more than one), wherein the conductive lines overlay the first dielectric sidewall of the at least one first structure, and provide conductive gates to the memory cells associated with the first structure, said conductive lines has a first portion that

Art Unit: 1756

stretches between the dielectric sidewall, and the adjacent pedestal and reaches the pedestal, the second portion of the conductive line that is not located between the dielectric sidewall and the pedestal is a sidewall spacer, wherein the sidewall spacer (second portions) are not protected by a mask during the first etch (etching operation); the at least one pedestal (reference 340 of figures 3B, 5, and 6) contacts two of the conductive lines, and the two conductive lines are insulated from each other. Chung, in col 4, lines 47-67, in col 5, lines 1-25, and in col 6, lines 42-47, discloses that the first layer (material layer, conductive layer) is formed around the pedestal (a portion P1), wherein the portion (P1) extends between the two future positions of the two conductive lines ((see figures 5, and 6), and in physical contact with the pedestal, and processing (etching) the first layer further via a second etch (to remove the portion P1, after a first etch) so as to insulate the two conductive lines from each other (claims 1-4, 22-23, and 42). Chung, in col 4, lines 56-67, in col 5, lines 1-25, discloses that the second etch is a masked etch with the portion of the first layer subjected to an anisotropic second etch, wherein the second etch is performed via a photolithographic mask, said mask can be formed over the peripheral areas of the memory cells (define gates of a peripheral transistor of the IC) (claims 5, 9, 24-25, and 29). Chung, in col 5, lines 35-36, discloses that the peripheral transistor can be formed from a layer different from the first layer (claims 6, and 26). Chung, in col 3, lines 1-55, and in figures 5-8, discloses a first structure that includes a first and second dielectric sidewall, and the first layer initially forms portions over the second dielectric sidewall, performing a third etch (isotropic third etch performed after the anisotropic second etch) over the second sidewalls and not the

Art Unit: 1756

first sidewall, so as to expose the first layer portions (P1) to the third etch, wherein the third etch is a masked etch (see figure 7) that extends past the ends of the conductive lines over previously exposed portions (claims 7-8, 10, 27-28, 30, and 51-52). Chung, in col 5, lines 1-17, and in figures 3B, and 5-6, discloses a first structure with a first and second sidewall, and the first layer is formed conformally over the ends (includes between the sidewalls) and around the ends of the first and second sidewalls, performing a second anisotropic etch, wherein the first etch involves etching the first layer formed on the second sidewall and not the first sidewall, and simultaneously etching the first layer portion (P1) (claims 11-12, 31-32). Chung, in col 4, lines 6-14, discloses that the pedestal comprises a conductive feature (conductive layer) that are dummy elements and not circuit elements of the IC, and that the pedestals are dummy structures with no electrical functionality (claims 13-14, 33-34, and 43-44,). Chung, in col 3, lines 10-57, discloses that dielectrics (dielectric layer) overlies the word lines (conductive lines), and that a contact opening is formed in the dielectric layer so as to expose a first portion of the conductive lines (forming a path over the word line) and allowing the formation of an electrical contact between the word lines and a metal contact (patterned) by depositing a conductive plug in the openings, wherein the word lines (conductive lines) extend along a row of the memory cells (claims 15-17, 35-37, and 45-47). Chung, in col 3, lines 5-18, discloses that each first structure (row structure) comprises a conductive control gate line that provide control gates for the corresponding row of the memory cells (associated memory cells) (claims 18, 38, and 48). Chung, in col 6, lines 62-64, discloses that the minimum thickness of the first

portion is greater than the minimum thickness of the second portions i.e., second portions are narrower than the first portions (claims 19-20, 39-40, and 49-50). Chung, in col 6, lines 55-56, discloses that the first portions are not protected by a mask during the first etch (etching operation) (claims 21, and 41).

Response to Arguments

3. Applicant's arguments filed January 8, 2007, have been fully considered but they are not persuasive. The 102 rejection made in the previous office action (paper no. 20060930) is maintained.

A) Applicants argue that Chung does not disclose that the pedestal physically contacts two conductive lines that are insulated from each other.

Chung, in col 5, lines 1-34, and in figure 6, discloses the pedestal contacting the word lines on either side of the sidewalls of the pedestal, and the word lines are insulated from each other. Chung, in col 3, line 45, discloses that the word line (conductive lines) overlies the pedestals i.e., the pedestal physically contacts the word lines on either side of the pedestal.

B) Applicants argue that Chung does not disclose the first etch, the second anisotropic etch and the third isotropic etch.

Chung, in col 3, lines 1-55, in col 5, lines 1-31, and in figures 5-8, discloses forming the sidewall spacers by a first etch performing a second anisotropic etch via a mask, and performing a third isotropic etch over the second sidewalls.

C) Applicants argue that Chung does not disclose that a single pedestal contacts multiple word lines.

See argument A). Also, the claims recite that the at least one pedestal contacts two of the conductive lines. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a single pedestal contacts multiple word lines) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

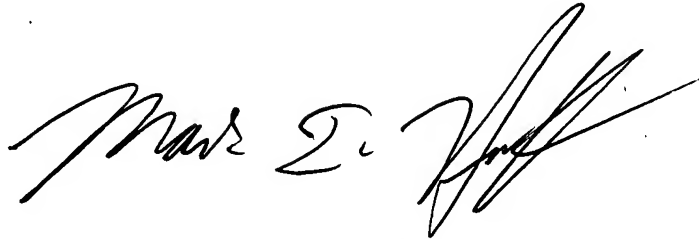
Art Unit: 1756

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd



March 21, 2007.



MARK E. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700